1. A birefringent interference polarizer comprising multiple alternating oriented layers of at least first and second polymeric materials having respective nonzero stress optical coefficients which are sufficiently different to produce a refractive index mismatch between said first and second polymeric materials in a first plane which is different from the refractive index mismatch between said first and second polymeric materials in a second plane normal to said first plane.

2. The birefringent interference polarizer of claim 1 in which said first and second polymeric materials have substantially equal refractive indices when unoriented.

3. The birefringent interference polarizer of claim 1 in which said oriented first and second polymeric materials have substantially equal refractive indices in one of said planes.

4. The birefringent interference polarizer of claim 1 in which said first and second polymeric materials are uniaxially oriented.

5. The birefringent interference polarizer of claim 1 in which said first polymeric material has a positive stress optical coefficient and said second polymeric material has a negative stress optical coefficient.

6. The birefringent interference polarizer of claim 1 in which said refractive index mismatch in said first plane is at least 0.03.

7. The birefringent interference polarizer of claim 1 in which the optical thickness of each layer is from about 0.09 micrometers to about 0.70 micrometers.

8. The birefringent interference polarizer of claim 1 in which said layers increase in thickness monotonically to produce a layer thickness gradient.

9. The birefringent interference polarizer of claim 1 in which said first polymeric material is selected from the group consisting of polycarbonates and polyethylene terephthalates.

10. The birefringent interference polarizer of claim 1 in which said second polymeric material is selected from the group consisting of polystyrene, copolymers of styrene and acrylonitrile, copolymers of styrene and methyl methacrylate, and polyethylene naphthalate.

11. The birefringent interference polarizer of claim 1 in which said second polymeric material is a syndiotactic polystyrene.

12. The birefringent interference polarizer of claim 1 in which said polarizer reflects and polarizes a portion of the light incident on its surface while transmitting the remainder of said incident light.

13. The birefringent interference polarizer of claim 1 in which said polarizer reflects and polarizes substantially all light incident in said first plane while transmitting and polarizing substantially all light incident in said second plane.

14. The birefringent interference polarizer of claim 1 in which said first and second polymeric materials comprise copolymers or miscible blends of polymers to adjust the respective refractive indices, stress optical coefficients, and glass transition temperatures of said polymeric materials.

15. The birefringent interference polarizer of claim 1 in which a coloring agent is incorporated into at least one layer of said birefringent polarizer.

16. The birefringent interference polarizer of claim 1 in which said coloring agent is selected from the group consisting of pigments and dyes.

17. A tunable birefringent interference polarizer comprising multiple alternating layers of first and second elastomeric materials having respective nonzero stress optical coefficients which are sufficiently different to produce a refractive index mismatch between said first and second elastomeric materials in a first plane which is different from the refractive index mismatch between said first and second elastomeric materials in a second plane normal to said first plane, said polarizer variably polarizing wavelengths of light dependent upon the degree of elongation of said elastomers.

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18. A method of making a birefringent interference polarizer comprising the steps of:

coextruding at least first and second polymeric materials having respective nonzero stress optical coefficients in multiple alternating layers, and

stretching said layers to orient said polymeric materials and produce a refractive index mismatch in a first plane which is different from the refractive index mismatch between said first and second polymeric materials in a second plane normal to said first plane.

19. The method of claim 18 in which said stretching step is carried out at a temperature above the glass transition temperature but below the melting temperature of said polymeric materials.

20. The method of claim 18 in which said first and second polymeric materials have substantially equal refractive indices when unoriented.

21. The method of claim 18 in which said oriented first and second polymeric materials have substantially equal refractive indices in one of said planes.

22. The method of claim 18 in which said first and second polymeric materials are uniaxially oriented.

23. The method of claim 18 in which said first polymeric material has a positive stress optical coefficient and said second polymeric material has a negative stress optical coefficient.

24. The method of claim 18 in which said refractive index mismatch in the plane of orientation is at least 0.03.

25. The method of claim 18 in which the optical thickness of each layer is from about 0.09 micrometers to about 0.70 micrometers.

26. The method of claim 18 in which said layers increase in thickness monotonically to produce a layer thickness gradient.

27. The method of claim 18 in which said first polymeric material is selected from the group consisting of polycarbonates and polyethylene terephthalates.

28. The method of claim 18 in which said second polymeric material is selected from the group consisting of polystyrene, copolymers of styrene and acrylonitrile, copolymers of styrene and methyl methacrylate, and polyethylene naphthalate.

29. The method of claim 18 in which said second polymeric material is a syndiotactic polystyrene.

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